

## ABSTRACT

The Invention is an XML Application Server for storing, processing, communicating, and displaying dynamic semi-structured information. The invention comprises a declarative specification language, a transactional indexed XML data store, and an XML application server engine. The invention's integrated architecture (a) provides for optimization, indexing, and backtracking search in a business logic layer, (b) provides for general-purpose programming idioms including recursive function definitions, iteration, and dynamic dispatch in data layer queries and updates, and (c) eliminates processing overhead and maintenance issues caused by transforming between relational, object-oriented, and semi-structured data paradigms.